

REMARKS AND RESPONSES

Claims 10, and 21-25 are now present in the application. Claims 21-25 have been added and are supported by paragraph [0027] and Figure 8 of the specification. Claims 10 and 23 are independent. Reconsideration of this application is respectfully requested.

Claim Rejection - 35 U.S.C. §103

Claim 10 was rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (US Patent No. 5,343,104) in view of Muller (US Patent No. 4,554,473).

Applicant respectfully requests reconsideration of the rejection for at least the reasons that follow.

If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)

(*Emphasis added*, MPEP §2143.01 **V. THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART UNSATISFACTORY FOR ITS INTENDED PURPOSE**)

Because of the facts derived from Takahashi and Muller, as set forth below, the suggested combination or modification would render Takahashi inoperable for its intended purpose.

First, Takahashi discloses that the purpose of temperature detection is achieved by a chip thermistor. In order to assure that the result of the temperature detection is correct, Takahashi teaches that the chip thermistor must be mounted on the mounting portion, which extends outwards from the

printed circuit board. That is, the mounting portion separates the chip thermistor and the heat-generating component on the printed circuit board, and thus the heat-generating component will not interfere with the chip thermistor. This is confirmed throughout the specification. For example, col. 8, lines 31-55 states:

For the purpose of temperature detection, the printed circuit board 224 has, as its integral part, a mounting portion 228 which extends radially outward as shown in FIG. 15, and a chip thermistor 229 is directly connected to trace lands 230, 230 on the mounting portion 228. The mounting portion 228 is provided with a hole 231 to assure that the thermistor 229 is directly exposed to circulating air. This allows the thermistor 229 to accurately detect the temperature of the delivered air. Since the mounting portion 228 extends radially outward, the thermistor 229 on it is little affected by heat generated by circuit components such as ICs and resistors on the printed circuit board 224. Thus, temperature detection error introduced by disturbing heat is minimal, and thus the thermistor 229 detects the temperature of the atmosphere as desired with sufficient accuracy. Furthermore, compared to a thermistor with leads which may need manual soldering to a printed circuit board, the chip thermistor 229 may be easily subjected to automated mounting along with other chip components on the printed circuit board 224.

FIG. 16 shows a variation of the printed circuit board 224. The mounting portion 228 of the printed circuit board 224 is provided with a U-shaped cutaway 232. The thermistor 229 is installed over the cutaway 232.

Accordingly, it is clear that the heat-generating component and the chip thermistor must not be together in the same place. Otherwise, the heat generated by the heat-generating component would interfere with the result of the temperature detection.

However, the modification proposed in the Office Action would provide the chip thermistor (229) of Takahashi with a heat generating electronic component in view of the teachings of Muller. Therefore, it is obvious that

the proposed modification would render Takahashi so modified unsatisfactory for its intended purpose.

Furthermore, the chip thermistor of Takahashi cannot be considered the heat-generating component of claim 10. In fact, the heat-generating component of claim 10 is carried on the protrusion, such that the air flowing past the protrusion can cool the heat-generating component down. However, the function of the chip thermistor of Takahashi is to detect the temperature of the delivered air. They are totally different. For at least the above reasons, the rejection of claim 10 should be withdrawn.

Claim 10 in the present application are now in condition for allowance. Allowance thereof is courteously requested.

New Claims

In addition, in the new claims 21-22, the heat-generating component of the claim 10 is limited to an integrated circuit and a semiconductor device respectively. In the new claim 23, a circuit board for operating a fan is provided. The circuit board includes a protrusion. The protrusion extends outside the circumference of the hub of the fan and carrying a heat-generating component. The protrusion includes a cutout that extends from a tip of the protrusion to the heat-generating component. In the new claims 24-25, the heat-generating component of the claim 23 is limited to an integrated circuit and a semiconductor device respectively. Claims 21-25 are directly supported by Figure 8 and paragraph [0027] of the specification. No new matter has been added by this amendment.

The prior art of Takahashi et al. and Muller fail to suggest or render obvious the claimed fan structure of the independent claim 10 and the circuit

board of the independent new claim 23. The new claims 21-22 are dependent from claim 10, and the new claims 24-25 are dependent from the new claim 23. Thus, the new claims 21-25 are now also in condition for allowance.

Conclusions

For all of the above reasons, applicants submit that the claims are now in proper form, and that the claims are patentable over the prior art. Therefore applicants respectfully request allowance for this application at the earliest convenience.

Respectfully submitted,

/Chao-Chang David Pai/

Date 11/03/2008

Chao-Chang David Pai
Attorney (Reg. No. 51,195)
Pai Patent & Trademark Law Firm
1001 4th Avenue, Suite 3200
Seattle, WA 98154
(Tel) 206-372-3162
(Fax) 206-374-2899